NMFS Proposed Listing
Information

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NOAA Fisheries Service
Southwest Region
FACT SHEET

Agenda Item 5a

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WEST COAST CHINOOK SALMON
February 26, 1998

Background: The National Marine Fisheries Service (NMFS) has completed the first ever comprehensive scientific review of chinook salmon along the entire U.S. west coast. Coast wide, there are 15 distinct groups, or evolutionarily significant units (ESUs) of chinook salmon ranging from southern California to the Canadian border and east to the Rocky Mountains. Based on previous scientific reviews, Snake River spring/summer chinook and Snake River fall chinook were listed as threatened species' in 1992, Sacramento River winter run chinook were listed as endangered in 1994, and upper-Columbia River summer/fall chinook were found not to require ESA protection in 1994.

Special Features: Chinook are easily the largest of any salmon with adults often exceeding forty pounds, and individuals over 120 pounds have been reported. They are prized by commercial, sport, and tribal fishermen alike. Chinook utilize a variety of freshwater habitats, but it is more common to see them spawn in larger mainstem rivers than other salmon species.

Scientific Findings:

1. **Sacramento River, CA winter-run ESU, Endangered**: First listed in 1989.
   - *Average abundance 830 fish, compared with average 86,500 fish in 1960s.
   - *Large proportion of spawning and rearing habitat lost.

2. **Central Valley, CA spring-run ESU, Proposed endangered**:
   - *Currently exist in small portion of previous range, loss of large portions of habitats.
   - *Average recent abundance is 2,400 natural fish compared with 40,000 in the 1940s.
   - *Potential hybridization between spring and fall run fish in hatchery and mainstem Sacramento River, with significant straying by hatchery fish due to off-site releases.

3. **Central Valley, CA fall/late fall-run, Proposed threatened**:
   - *Average recent escapement above 200,000, from natural production.
   - *Excessive hatchery production and harvest levels affecting natural populations.
   - *Long term trends generally stable.
   - *Loss of intra-ESU genetic diversity via transfers between hatcheries and straying by hatchery fish released off-site.
   - *High ocean harvest rates (71-79%) and recent freshwater harvest rates of 25%.
   - *Degradation of migration, spawning and rearing areas, especially in the San Joaquin basin.

4. S. Oregon & California Coastal ESU, **Proposed threatened**:
*Average recent escapement about 132,000 in Oregon, few estimates for California rivers.
*Strong negative trends for spring-run chinook in the Rogue River (OR) and fall-run chinook in the Eel River (CA), which are the two major production areas for chinook in this ESU.
*Spring chinook populations are small (under 100 individuals) except for the Rogue River.
*Degradation of spawning and rearing habitat.

5. **Upper Klamath and Trinity Rivers ESU, ESA protection unnecessary at this time**:
*Average natural escapement near 48,000 fish, estimated 168,000 natural fish in 1965.
*Relatively stable long-term trends, spring-run populations depressed.
*Hatchery fish recently comprise 26% of total escapement (1991-1995).
*Possible hybridization of fall- and spring-run populations at Trinity River Hatchery.
*Degradation of spawning and rearing habitat, loss of habitat to dams on both rivers.

6. **Oregon Coast ESU, ESA protection unnecessary at this time**:
*Abundance near historical levels; recent natural escapement averaging about 136,000 fish.
*Recent terminal run about 170,000, compared with peak run of 225,000 in 1896.
*Long term trends in abundance stable to increasing, short-term trends mixed.
*Spring/summer-run populations at greater risk than fall-run populations.
*Relatively little hatchery contribution to escapement in most basins.
*Degradation of freshwater spawning and rearing habitat.

7. **Washington Coast ESU, ESA protection unnecessary at this time**:
*Recent average spawning escapement 50,000 fish, historic peak run about 190,000 fish.
*Long-term abundance trends mixed, short-term trends are generally negative.
*High hatchery contribution to escapement in Willapa Bay basins.
*Total exploitation rates 48-56% (1982-1989).

8. **Puget Sound ESU, Proposed threatened**:
*Average current abundance 71,000 (spawning escapement).
*Recent ave. run size about 240,000 compared with historical peak run size of 690,000
*Trends predominantly downward in North Sound and Hood Canal, upward in South Sound.
*Large hatchery contribution to spawning escapement, with excessive use of a few hatchery stocks throughout the ESU.
*Overall exploitation rates average 68-83% (1982-1989).
*13 native/ naturally reproducing stocks rated by WDFW: 2 healthy, 5 depressed, 2 critical, and 4 unknown.
*Degradation of freshwater spawning and rearing habitat, with access to much of the spring run spawning and rearing habitat blocked.

9. Lower Columbia River ESU, Proposed threatened:

*Recent natural spawning averaged about 40,000, with large hatchery component.
*Long-term trends mixed with larger stocks upward, short-term trends mixed.
*Overall reduction in naturally-spawning fish.
*Complete or nearly complete replacement of native spring-run stocks with stocks from outside ESU (Clackamas, Sandy, White Salmon, and Lewis Rivers).
*Releases of Rogue River fall-run chinook salmon into the ESU.
*Homogenization of hatchery stocks through egg transfers.
*Recent total exploitation rates average 65%.
*Degradation of spawning and rearing habitat, spring run spawning/rearing habitat blocked.

10. Upper Willamette River ESU, Proposed threatened:

*Recent total escapement averaged 26,000, however, naturally-spawning escapement may average 3,900 fish, of which only 1,300 are naturally produced.
*Negative short-term and long-term trends.
*Degradation of spawning and rearing habitat, access to historical habitats blocked.
*Introduction of fall-run chinook salmon from outside of the ESU.
*Total exploitation rate of about 60%.

11. Middle Columbia River spring-run ESU, ESA protection unnecessary at this time:

*Recent in-river run about 25,000 adults (based on dam counts).
*Populations in the Umatilla, Hood, and upper Deschutes River Basins are extinct.
*Long-term trends mostly negative; Short-term trends negative.
*High hatchery contribution in Deschutes and Klickitat Rivers, use of non-native stocks in Hood, Umatilla Rivers; little or no hatchery production the John Day and Yakima Rivers.
*Lost access to some historical spawning habitat, degradation of spawning and rearing habitat.

12. Upper Columbia River summer/fall-run, ESA protection unnecessary at this time:

(Previously referred to as mid-Columbia River summer/fall-run.)

*Recent dam counts about 58,000; Hanford Reach fall run is predominant population.
*Long-term trends positive for larger populations, mixed for smaller populations.
*Summer run is heavily influenced by hatchery releases (Wells Dam stock).
*Degradation of freshwater spawning and rearing habitat, with hydro project related inundation of mainstem spawning grounds and degradation of migration corridor.

13. Upper Columbia River spring-run ESU, Proposed endangered:

*Recent average escapement less than 5,000, recent runs sizes are the lowest in 60 years.
*Long-term trends are mostly negative, short-term trends negative, 8 of 10 trends are < -20%
*Most populations are extremely small, all < 150.
*Loss of a significant portion of historical spawning and rearing habitat.
*Degradation of rearing habitat and migrational corridors.
*WDFW and Yakama Tribe have proposed initiating emergency captive brood programs for most populations.

14. **Snake River fall-run ESU, Threatened**: Listed in 1992. Now believed to include additional fall run populations. Redefined ESU proposed as threatened.

*Genetic analysis links fall chinook from the Deschutes River to the existing ESU.
*Total natural escapement averages about 6,500, with decline in Snake River population from 72,000 (1940) to 500 natural spawners (1992-1996).
*Populations in mainstem Columbia River, John Day, Umatilla, and Walla Walla Rivers are extinct, in addition to the loss of populations which historically spawned above the Hells Canyon Dam Complex.
*Long-term trends downward in both populations, recent trends upward.
*47% of Snake River escapement is hatchery produced, no hatchery production in Deschutes.
* Degradation of spawning/rearing habitat, much historical spawning/rearing habitat blocked.
*Management changes have significantly reduced ocean harvest rates in the last six years.

15. **Snake River spring/summer ESU, Threatened**: First listed in 1992.

*Recent average abundance (2,500 natural spawners) is significantly lower than historical levels which may have been as high as 1.5 million adults in the 1800s.
*Long- and short-term trends in abundance are generally negative.
*Populations in the Clearwater, Payette, Power, Weiser, Malheur, Owhyee, and Bruneau River Basins and Asotin Creek are extinct.
*61% of total escapement is hatchery derived.
*Degradation of spawning/rearing habitat, much historical spawning/rearing habitat blocked.

What Next? NMFS will announce public hearings throughout the range of the proposed ESUs to provide an opportunity for the public to comment on the proposed listings and designations of critical habitat. There is a 90-day public comment period to receive written comments on the issues raised and the information solicited in this proposed rule. NMFS will review comments and testimony from the public, and within 12 months of this announcement, NMFS will make final determinations on these proposals and issue final rules, designate critical habitat, and issue regulations to protect threatened and endangered chinook. Background materials on these proposals may be obtained by writing to Garth Griffin or Crain Wingert at the following respective addresses: NOAA Fisheries Svc., Protected Resources Division, 525 N.E. Oregon Street, Suite 500, Portland, Oregon, 97232, (503/230-5400); or NOAA Fisheries Svc., Protected Resources Division, 501 W. Ocean Blvd., Ste. 4200, Long Beach, CA 90802, (562/980-4021)

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